

DIRECT PRINT-OUT OSCILLOGRAPH PAPER

PERFORMANCE CHARACTERISTICS

- * Unexcelled trace stability
- * Fastest latensification rate (trace pop-up)
- * High writing speeds (over 80,000 inches per second)
- * High trace density
- * Easily stabilized in machine or tray processing
- * Broad exposure latitude
- * Consistent record quality regardless of machine transport speeds
- * Excellent visual contrast
- * Easy-reading bright yellow background
- * Diazo reproducible
- * Flat-lying and easy-handling

DESCRIPTION

Anscotrace is a direct print-out paper for use in oscillograph recorders equipped with high intensity ultraviolet light sources. The latent image formed by exposure to these sources is made visible, or latensified, by a second exposure to fluorescent or ultraviolet light. The record is a blue line on a bright yellow background. Oscillograms on Anscotrace will remain almost unchanged and legible for years if stored protected from light as in office files. They should also be protected from heat, humidity, and chemical fumes.

In oscillograph recording the combination of frequencies of several thousand cycles per second, amplitudes of several inches, and paper travel as high as 160 inches per second can add up to writing speeds on the order of 80,000 inches per second. In recording equipment working at top efficiency Anscotrace has been shown capable of recording at even higher writing speeds.

LATENSIFICATION (PHOTO-DEVELOPMENT)

At slow recorder speeds the trace can be made visible within a few seconds by exposure to two 15-watt cool white fluorescent tubes placed a few inches from the paper as it comes out of the oscillograph. In recorders incorporating a heated platen over which the paper passes after the recording exposure, the trace can be made visible almost instantaneously at paper travel up to about four inches per second. Cool white or black light fluorescent tubes are most suitable. A mixture of both permits adjustment of the light level for a comfortable reading of the record, free from glare.

If recording is done at high transport speeds, the trace can be made visible after completion of the recording by (1) reversing the paper travel in the recorder to pass the paper under the fluorescent lamp at sufficiently low speed, or (2) exposing the record to average fluorescent office illumination, measuring 25 to 50 foot candles, to bring out the trace in 15 to 30 seconds and fully "develop" it in about 3 minutes, or (3) using the Stabilizer Kit for Anscotrace to wet-process the record either in trays or in a commercial oscillogram processor like the CEC 23-109 equipment (Consolidated Electrody namics Corp.).

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STABILIZATION

Both latensified and non-latensified records can be stabilized or made permanent. However, such stabilizing will produce best results of black lines on almost white backgrounds on non-latensified records. Latensified records show higher background density after stabilization. Stabilized records have the same permanence as conventional developing-out oscillograph papers.

OSCILLOGRAM DUPLICATION

Copies of good contrast and permanence can be made from Ansco-trace latensified recordings. Use Scona (R) Reflex paper to make a reflex negative from which excellent positive contact prints can be made on any contact printer. Or, duplicate the recording on Ozalid Transferon (R) photocopy paper from which low-cost copies can be run off on Ozalid diazo paper. Many office copy processes also produce good reproductions from Ansco-trace oscillograms. If diazo copies are to be made directly from oscillogram originals, the latter should be stabilized first.

HANDLING

Ansco-trace paper may be loaded into the oscillograph in subdued room light. Exposure of the roll to sunlight is to be avoided. A good oscillogram on Ansco-trace will, without stabilization, stand many hours of exposure to average office illumination (25 to 50 ft. candles). Exposure of an unstabilized oscillogram to room light over long periods of time will gradually raise the background density and lower the trace density so that the record eventually becomes illegible.

AVAILABILITY

The following roll sizes of Ansco-trace paper on standard weight stock are available:

<u>Size</u>	<u>Ctn.</u>	<u>List</u>	<u>Size</u>	<u>Ctn.</u>	<u>List</u>		
<u>Spec.</u>	<u>Quan.</u>	<u>Price</u>	<u>Spec.</u>	<u>Quan.</u>	<u>Price</u>		
6" x 100'	Sp 2	20	8.35	12" x 200'	Sp 28	6	29.50
8" x 100'	Sp 2	20	11.25	7" x 100'	Sp 111	20	9.85
8" x 200'	Sp 2	10	21.55	7" x 200'	Sp 28	10	18.45
12" x 200'	Sp 2	6	29.50				

STABILIZER CHEMICALS

Stabilizer Kit for Tray Processing. Contains two components sufficient to make one gallon each of developer and stabilizer solutions. Packed in cartons of 6 kits.

List price per kit \$3.00

Stabilizer Kit for Machine Processing. Fits standard C.E.C. processors. Packed in cartons of 4 kits.

List price per kit \$7.35

Ansco Photo Products • General Aniline & Film Corp., Binghamton, N.Y.

GAF-ANSCO LINATRACE® OSCILLOGRAPH RECORDING PAPERS

LINATRACE R-4

A medium speed recording paper, suitable for general applications. Gives clear, sharp traces over a wide range of frequencies. Has high orthochromatic sensitivity. Adapted to continuous or rewind processors with Linatrace Processing Kit No. 1. Also may be used in rapid access stabilization type processors, such as the Datarite processor made by Consolidated Electrodynamics Corporation. Stock is medium-thin, .0035" thickness, of 100% rag fiber type - tough, flexible, easily reproduced by diazo or other methods.

<u>ROLL SIZE</u>	<u>WINDING SPEC.</u>	<u>PRICE</u>
3-5/8" x 150'	1	7.12 *
5" x 225'	1	13.15
7" x 100'	1	8.22
7" x 200'	1	15.18
7" x 400'	195	29.68
8" x 200'	1	17.08 *
10" x 200'	1	21.32 *
12" x 300'	1	36.92 *
12" x 400'	1	48.12 *
12" x 400'	28	48.12

LINATRACE A-4

A medium to high speed recording paper similar in general characteristics to Linatrace R-4 but more than twice as fast in practical exposure speed. Suitable as an all-purpose recording paper, with writing speed capability over 5000 inches per second, matching the range of most oscillograph recorders. Adapted to continuous or rewind processors using Linatrace Chemical Kit No. 1. Base is medium thin, .0035" thickness, of 100% rag fiber type.

<u>ROLL SIZE</u>	<u>WINDING SPEC.</u>	<u>PRICE</u>
3-5/8" x 100'	1	5.50 *
3-5/8" x 150'	1	7.50 *
5" x 225'	1	14.15
7" x 200'	1	16.62
7" x 400'	195	32.28 *
8" x 200'	1	18.28
10" x 200'	1	23.22 *
12" x 300'	1	39.05 *
12" x 400'	1	51.72 *
12" x 400'	28	51.72

LINATRACE A-3

Linatrace A-3 has the same emulsion type as A-4 described above, so its photographic characteristics are similar. However, the base is extra thin to provide maximum length in rolls of a given diameter, for extended period recording. The thinner base also permits faster reproduction by diazo or other copying methods. Base is .0028" thickness, 100% rag fiber content, making a tough, flexible material with high wet strength and excellent wear-and-tear quality. Linatrace A-3 is adapted to continuous processors, using the Linatrace Chemical Kit No. 1.

<u>ROLL SIZE</u>	<u>WINDING SPEC.</u>	<u>PRICE</u>
3-5/8" x 150'	1	7.50 *
5" x 225'	1	14.15
7" x 225'	1	18.65
7" x 400'	195	32.28 *
8" x 200'	1	18.28 *
8" x 400'	1	34.82 *
10" x 200'	1	23.22 *
10" x 350'	1	38.80 *
12" x 450'	28	57.55
12" x 475'	1	60.75 *
12" x 475'	28	60.75

<u>LINATRACE N-3</u>	<u>ROLL SIZE</u>	<u>WINDING SPEC.</u>	<u>PRICE</u>
This represents the highest speed oscillograph recording paper of the developing-out type. Linatrace N-3 has exposure speed three times greater than A-4 and A-3. It also has wider exposure latitude and is especially designed for applications in which recording high trace velocities is the primary requirement. Capable of recording writing speeds over 30,000 inches per second. Adapted to continuous processors using Linatrace Chemical Kit No. 1. Base is extra thin, .0028" thickness, 100% rag fiber content, same as used for Linatrace A-3.	3-5/8" x 150' 4" x 175' 5" x 225' 6" x 400' 7" x 225' 7" x 400' 8" x 225' 8" x 400' 10" x 350' 12" x 350' 12" x 450' 12" x 475' 12" x 475'	1 1 1 1 1 195 1 1 1 1 28 1 28	8.02 9.62 14.72 29.62 20.12 34.82 * 22.82 37.62 41.08 * 49.02 62.64 66.12 66.12

* These are special order items, not available in stock but supplied as follows:

Shipment four to six weeks after receipt of order.

Minimum Order - number of rolls or multiples that take master roll width of 40 inches.

LINATRACE CHEMICAL KIT NO. 1

This is designed to fit Consolidated Electrodynamics Corporation Oscillograph Processors and similar equipment. The kit contains four cans of powdered chemicals to provide 1 1/2 gallons of developer and three 1 gallon stabilizer solutions. Processing capacity of the kit is 800 square feet of Linatrace paper. Packed 4 kits per shipping container.

Per Kit-----\$ 5.40

Prices subject to change without notice.

Winding Specifications for Oscillograph Papers

Spec. 1 - Wound emulsion in, 1-1/8" I.D. kraft core

Spec. 2 - Wound emulsion out, 1-1/8" I.D. kraft core

Spec. 28 - Wound emulsion in, 2" I.D. kraft core

Spec. 111 - Wound emulsion in, 3/4" I.D. kraft core

Spec. 195 - Wound emulsion in, 3" I.D. kraft core

GAF-ANSCO PHOTO PRODUCTS • GENERAL ANILINE & FILM CORPORATION, BINGHAMTON, NEW YORK

GAF-ANSCO

COLOR OSCILLOGRAPH PAPER (FPC-235)

UNIQUE PRODUCT ADVANTAGES

- * Produces trace lines in three colors - Magenta, Cyan (blue-green) and purple - utilizing full capabilities of your oscilloscope
- * Provides greater information handling capacity
- * Reduces data readout time and cost
- * Reduces overall test time by decreased readout interval
- * Reduces readout error
- * Reduces paper usage as a result of more traces on a single record and slower transport speeds possible with color

PERFORMANCE CHARACTERISTICS

- * Unmatched trace-line sharpness
- * Optimum color discrimination through the complete range of trace densities
- * Wide latitude resulting in well-defined trace line even with over-exposure
- * Record permanence assured by silver-dye trace
- * Simple two-step processing, fits standard oscilloscope processors
- * Interchangeable with B & W paper in same machine
- * Good dimensional stability
- * Very good handling flexibility with minimum brittleness
- * Shelf-life comparable to B & W papers; refrigeration not needed
- * Non-corrosive chemicals keep tanks and dryer drums exceptionally clean

DESCRIPTION

Ansco color oscilloscope recording paper is a two-color paper providing three distinct trace colors, and is designed for use in closed-magazine oscilloscopes with either tungsten or ultraviolet light sources. It requires no more skill or technology than conventional B & W papers.

Ansco paper employs two color emulsions which were specifically selected to give optimum color discrimination through a complete range of densities. A blue-sensitive emulsion creates a cyan (blue-green) color trace when exposed

through a red filter. The second color, magenta (blue-red), is produced by exposure of a green-sensitive emulsion through a yellow filter. With white light creating an exposure in both emulsions, a third color, purple, is formed by the combination of the two dyes, with a light yellow filter used to balance the exposure. In comparison with B & W papers, Ansco color paper provides exceptional results in the sharpness of the trace.

The sensitivity range of both emulsions is compatible to the spectral emission of both tungsten and ultraviolet light sources. Because of the lack of red sensitivity, a Series 2, dark red, safelamp can be used with this paper.

Ansco color oscilloscope paper is adaptable to simple conversion of the standard oscilloscope for using color. The rotating lens turret of the C. E. C. Type 7-300 galvanometer (Consolidated Electrodynamics Corporation) provides a convenient method for holding the required filter. The lens turret, when rotated 90°, makes accessible the depression formed by the back of the lens and the turret frame. A proper filter can be fitted into the depression. Rotating the turret back into operating position locks the filter in place.

The 100% rag content base has good dimensional stability with low brittleness and high wet strength.

Important in an oscilloscope paper, records have good image stability making them storable under the same conditions as B & W papers.

ADVANTAGES OF COLOR OSCILLOGRAMS

During extended field tests, color oscilloscope made with Ansco color paper showed distinct advantages over black and white records. They offered an important improvement in that a greater number of traces could be displayed on a single record without concern for intermixing traces. Costs are reduced because complex signals no longer need to be hand colored before actual readout. Savings not easily estimated are found in the areas of reduction of human error during readout and in a shortening of test time due to faster retrieval of test information.

PROCESSING

A new color processing system, adapted to the C. E. C. four tank processor, was especially developed for this Ansco color oscilloscope paper. It is a simple 2 solution process that eliminates the need for bleaching or washing. The first two processor tanks are used for the color developer and the remaining two tanks contain a special fixing bath. The stability of the dyes is such that no degradation is encountered from contact with the 350F drying drum during the drying cycle.

The use of two tanks for developer and two tanks for fixer extend the allowable processing time so that 1 full minute of development and 1 full minute of fixing is possible at a processor speed of approximately four feet per minute.

Optimum developer temperature is $102F \pm 2F$. A variation in processing speeds from 3 to 6 feet/minute causes no appreciable change in the processed record. There is also no appreciable change when the developer temperature is varied from $100F$ to $105F$, at a given processing speed. However, processing temperature should not be allowed to drop below $100F$.

Elimination of the bleaching step, unnecessary in the processing of oscilloscopes made from Ansco color paper, provides important advantages. It makes possible the retention of the developed silver in the color traces which assures image permanence equal to that of stabilized B & W oscilloscope records. In addition, eliminating the bleaching process means, of course, that there will be no bleach stain to be removed by washing or other means. Finally, this further reduces the number and cost of processing solutions -- and the time required to prepare them. However, in cases where a high degree of trace-line permanence is important, thorough washing will produce longer-lasting oscilloscopes.

OSCILLOGRAM DUPLICATION

The retention of the developed silver makes possible the monochromatic duplication of Ansco color oscilloscope records by diazo and other standard reproduction methods used presently for reproducing stabilized B & W oscilloscopes.

HANDLING

Ansco color oscilloscope paper may be loaded into the oscilloscope under Series 2 safelight illumination.

PROCESSING CHEMICALS

A special Processing Kit for Ansco color oscilloscope paper, FPC-336, is designed for use in the C. E. C. 23-109 four tank processor or for tray processing. The kit consists of a developer and a stabilizer. The developer mixes with water to three gallons of solution. The stabilizer mixes to two gallons of solution.

In the C. E. C. four tank processor, a quantity of two and one-half gallons of the mixed developer solution is placed in the developer tanks for the first 300 sq. ft. of paper. After the 300 sq. ft. are processed, the remaining one-half gallon of solution is added to maintain developer level during processing of an additional 300 sq. ft. of material. A total

of 600 sq. ft. can be processed with 3 gallons of mixed developer solution. Placed in the fixer tanks at the start of processing, the full two gallons of mixed stabilizer solution is sufficient for processing 600 sq. ft. of material without replenishment.

AVAILABILITY

Ansco color oscilloscope paper (FPC-235) may be ordered as follows:

<u>Size</u>	<u>Winding Spec.</u>	<u>List Price</u>	<u>Size</u>	<u>Winding Spec.</u>	<u>List Price</u>
3 5/8" x 100'	1	\$ 9.45*	8" x 200'	1	\$33.00
5" x 125'	1	13.75*	12" x 300'	1	67.00
7" x 150'	1	22.00	12" x 300'	28	67.00
7" x 150'	111	22.00			

* Non-stock sizes available in minimum quantities of 11 rolls of 3 5/8" width and 8 rolls of 5" width or multiples thereof.

Processing Kit for Ansco color oscilloscope paper (fits C. E. C. Processor #23-109). Packed in cartons of six. List Price Per Kit \$6.00.

Color Oscilloscope Filter Set (to fit C. E. C. galvanometers). Includes 20 filter chips of each of 4 colors. List Price Per Set \$6.25.

(Prices subject to change without notice.)



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